

Section 4-1500 FOD - Floodplain Overlay District

4-1501 Purpose and Intent. These provisions are created to regulate and restrict land use in areas within the County which are subject to severe periodic inundation, in such a manner as to: (1) protect life and prevent or minimize property damage; (2) reduce public costs for flood control, rescue and relief efforts occasioned by unwise use or occupancy of such areas; (3) conserve the natural state of watercourses and watersheds, and minimize the damaging effects which development has on drainage conditions, pollution of streams, and other environmental impacts on the County's water sources; (4) comply with Federal and State laws and regulations that address the need for floodplain management and protection; and (5) qualify Loudoun residents for the insurance and subsidies provided by the National Flood Insurance Program. Only those uses set forth in Section 4-1505 and 4-1506 shall be permitted by right or special exception within the Floodplain Overlay District, and land so encumbered may be used in a manner permitted in the underlying district only if and to the extent such use is also permitted in the overlay district.

4-1502 Authority. Authority for these provisions includes:

- (A) Flood Damage Reduction Act, Va. Code Sections 62.1-44.108 et seq.
- (B) Chapter 11, Title 15.1, Code of Virginia (Planning, Subdivision of Land and Zoning).
- (C) Soil Conservation Districts Law, Va. Code Sections 21-2(c), 21-2(d).
- (D) Virginia Environmental Quality Act, Va. Code Section 10-178.
- (E) Erosion and Sediment Control Act, Va. Code Section 21-89.2.
- (F) Potomac River Basin Compact, Va. Code Section 62.1-69.1.
- (G) National Flood Insurance Act of 1968, 42 U.S.C. 4001 et seq.

4-1503 Definitions. Unless otherwise specially provided, or unless clearly required by the context, the words and phrases defined in this subsection shall have the following meanings when used in Section 4-1500.

- (A) **Alteration.** A development action which will change the cross section of the floodplain and will increase either the erosive velocity or height of floodwaters either on-site or off-site. Alterations include, but are not

limited to, land disturbing activities such as clearing, grading, excavating, transportation and filling of land.

- (B) **Base Flood.** The flood having a one (1) percent chance of being equalled or exceeded in any given year. Also known as the 100-year flood.
- (C) **Cross section.** Shape and dimensions of a channel and valley of the floodplain perpendicular to the line of flow.
- (D) **Floodplain.** Any land area susceptible to being inundated by water from the base flood and having a drainage area greater than one hundred (100) acres. For purposes of regulation under this Ordinance, a distinction is made between floodplains in watersheds of greater than 640 acres, and those in watersheds of less than 640 acres.
- (E) **Road, Crossing of the Floodplain.** Any improved right-of-way traversing a floodplain generally perpendicular to the flow of the drainageway. Driveways serving one (1) lot shall not be considered road crossings.
- (F) **Stormwater Management Improvements.** Surface drainage improvements, storm sewers, detention and retention ponds and other such improvements as required under authority of the Loudoun County Erosion Control Ordinance and Plan, Chapter 1220 of the Loudoun County Code.
- (G) **Utility Lines in the Floodplain.** Storm sewers, sanitary sewers, water lines and similar lines running generally parallel and perpendicular to the flow of the drainageway; and other public utility lines traversing a floodplain generally perpendicular to the flow of the drainageway.

4-1504

Administration.

- (A) The sources of delineation of the floodplain shall include, but shall not be limited to:
 - (1) Flood Insurance Study of Loudoun County, Virginia, unincorporated areas by the Federal Emergency Management Agency (FEMA) (November, 1985, as amended) (This study shall represent the minimum identification of the floodplain. Any changes to the Flood Insurance Rate Map data contained in this study shall have the prior approval of the Federal Insurance Administration);

- (2) Flood hazard studies by USDA-Soil Conservation Service;
 - (3) Floodplain studies by other Federal agencies such as the Corps of Engineers or the U.S. Geological Survey (USGS);
 - (4) Detailed site-specific floodplain studies conducted by consulting engineering firms or government agencies;
 - (5) For the Potomac River, the flood of 1936 known elevations along with a hydraulic gradient established by past flood events and ground topography; and
 - (6) For the main stem of the Broad Run, from the Potomac River to the confluence of the North and South Forks, The Floodplain Study of the Broad Run Watershed, prepared by GKY and Associates, Inc. dated December 1990, as amended.
- (B) The watershed map of Loudoun County shall show the approximate floodplain elevations and boundaries of watersheds greater than 100 acres and of watersheds greater than 640 acres. The Zoning Administrator, in consultation with the Director of Environmental Resources, is charged with making necessary cartographic interpretations of those maps.
- (C) The provisions of this Section shall apply to all land within a floodplain. As used in this Section 4-1500, "floodplain" refers to certain areas whose boundaries are determined and can be located on the ground by reference to the definition of that term. The boundaries of the floodplain as shown on the Floodplain Map of Loudoun County are intended to correspond to the actual physical location of the floodplain. The Zoning Administrator, in consultation with the Director of Environmental Resources, is authorized to make necessary interpretations as to the exact location of the boundaries of floodplains if there appears to be a conflict between the mapped floodplain boundary, elevations and actual physical conditions. Such interpretations may be appealed to the Board of Zoning Appeals in accordance with the provisions of Section 6-1700. The Zoning Administrator may require information from any applicant, including, but not limited to a topographic survey and/or an engineering study of the floodplain in conformance with the provisions of the Facilities Standards Manual.

4-1505

Permitted Uses. The following uses, having a low flood damage potential and causing no obstruction of flood flows, shall be permitted within the Floodplain Overlay District. Uses allowed in the underlying district shall be prohibited to the extent not permitted by right or by special exception in the Floodplain Overlay District. Where any uses, structures or improvements will result in an alteration to

the floodplain, applications for alterations must be submitted to the Zoning Administrator in accordance with subsection 4-1508, and any alteration must meet the criteria contained in that subsection.

- (A) Permitted uses in the floodplain of streams draining greater than 640 acres.
 - (1) Agricultural uses such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, wildcrop harvesting, vegetable gardens, truck farming and sod farming. In addition, timber harvesting is permitted upon submission of a Timber Management Plan that has been approved by the Virginia Division of Forestry.
 - (2) Fishery uses such as fish hatcheries, fish harvesting.
 - (3) Public or private recreational uses such as golf courses and driving ranges, archery ranges, picnic grounds, wildlife and nature preserves, target ranges, trap and skeet ranges, hunting and fishing areas, swimming areas (except for swimming pools) hiking and horseback riding trails, play areas of a natural, permeable nature, including ball fields and polo fields, and other similar park and open space uses. Tennis courts, basketball courts, and similar type courts are permitted provided impervious surfaces do not exceed three percent (3%) of the floodplain within the development, and are not located within the floodway.
 - (4) Stormwater management improvements associated with uses permitted by right or special exception in the Floodplain Overlay District.
 - (5) Utility lines, road crossings, private drives, serving up to seven (7) lots and private access easements serving low density development, and Private Lanes serving up to twenty-five (25) lots in the A-25 District as provided for in Section 2-107.
 - (6) Repair, reconstruction or improvement of existing residences, so long as the footprint of the existing residence is not increased and is not considered a substantial improvement. "Substantial Improvement" means any repair, reconstruction or improvement

the cost of which equals or exceeds fifty percent (50%) of the market value of the existing structure either (a) before the improvement or repair is started, or (b) if the structure has been damaged and is being restored, before the damage has occurred, regardless of the actual repair work performed.

- (7) Parking areas accessory to uses permitted by right or special exception in Floodplain Overlay District.
- (8) Incidental structures, not exceeding 840 square feet of floor area, associated with permitted or approved special exception uses in the Floodplain Overlay District. Such structures include storage sheds, maintenance sheds, backstops, bath houses and locker rooms. Provided, however, bulk storage of gasoline, chemicals, fuels or similar substances are prohibited in the Floodplain Overlay District.
- (9) Temporary storage of material or equipment necessary in the construction of uses or structures permitted by right or special exception in the Floodplain Overlay District.
- (10) Alterations of the floodplain associated with any permitted or special exception uses in the Floodplain Overlay District. However, no channelization shall occur except to protect existing habitable structures subject to periodic flooding. Applications for alterations of the floodplain must be submitted in accordance with Section 4-1508. To the extent that the elevations and boundaries of the floodplain change as a result of the alteration action, any areas no longer within the floodplain may be used for any use in the underlying district, subject to the provisions of the applicable district regulations and conditions of any approved special exception.
- (11) Restoration and rehabilitation of historic structures included or eligible for inclusion on a federal, state or local historic register.
- (12) Road crossings subject to the procedures and standards in Section 4-1508. If such a development action results in an off-site increase in the water surface elevation of the base flood as shown on the Floodplain Map of Loudoun County, it is subject to the following criteria and provisions:

- (a) The procedures and standards for alterations in Section 4-1508 shall apply; provided, however, the proposed crossing may result in a rise in the water surface elevation of the base flood of no more than one (1) foot.
- (b) The proposed crossing must be a feature shown on the Comprehensive Plan.
- (c) A floodplain alteration in accordance with the Facilities Standards Manual shall be submitted delineating all increases in the base flood, and the new floodplain limits shall be approved by FEMA, where a FEMA designated floodplain or floodway will be altered. There shall be no increase allowed by FEMA in the base flood elevation within FEMA designated floodway.
- (d) The road crossing shall be designed and constructed in accordance with the standards and regulations of the Virginia Department of Transportation and/or the FSM, whichever shall apply.
- (e) An instrument describing the increase in the floodplain limits, and executed by each affected property owner, shall be recorded upon approval of the alteration for the road crossing.
- (f) The proposed crossing shall not result in an increase in the water surface elevation of the base flood affecting existing buildings and structures.
- (g) Affected off-site property owners may at any time mitigate impacts on their land as a result of an increase in the water surface elevation of the base flood by:
 - (i) Including all, or a portion of, the land subject to the increase in the base flood elevation for purposes of calculating the permitted density or intensity of use on the lot subject to such increase; and/or
 - (ii) Alterations in accordance with Section 5.440B of the Facilities Standards Manual to reclaim that portion of their land subject to the increase in water surface

elevation of the base flood as a result of the road crossing, provided there is no additional offsite rise in the 100-year water surface elevation; or

(iii) An affected landowner may request the following by special exception granted by the Board of Supervisors, in accordance with Section 4-1506 of the Zoning Ordinance, in conjunction with subsection 4-1505(A)(12)(g)(i):

(a) Adjustment of the building setback or parking setback requirements on specific lots or parcels of land affected by the increase in the elevation of the base flood; and/or

(b) Allocation of the density provided for in subsection 4-1505(A)(12)(g)(i) to other lots within the proposed development not directly subject to the increase in the base flood elevation. This provision is in addition to other density transfer provisions established by the Loudoun County Zoning Ordinance.

(B) Permitted uses in the floodplain of streams draining less than 640 acres.

(1) Uses allowed under Section 4-1505(A).

(2) Alterations. Applications for alterations whether or not associated with a permitted or special exception use must be submitted in accordance with Section 4-1508 and any alteration must meet the criteria contained in that section. To the extent that the boundaries of the floodplain change as a result of the alteration, any areas no longer within the floodplain may be used for any use in the underlying district, subject to the provisions of the applicable district regulations and conditions of any approved special exception.

(3) Stormwater management improvements whether or not associated with uses permitted by right or special exception in the Floodplain Overlay District.

(4) Farm ponds designed by the Soil Conservation Service.

- (5) Basketball or tennis courts, and swimming pools.
- (6) Parking areas less than 5,000 square feet not otherwise permitted. Such parking areas shall not be subject to 100-year flooding greater than one foot in depth, shall be equipped with best management practices maintained by the property owner, and shall not require major fill.

4-1506 Special Exception Uses. The following uses and structures may be permitted in the floodplain by the Board of Supervisors by special exception, subject to Section 6-1300 and subsection 4-1507.

- (A) Marinas, boat rentals, docks, piers, wharves, water ski jump facilities, and incidental structures associated with such uses, such as bath houses and locker rooms.
- (B) Carnivals, circuses and similar transient amusement enterprises.
- (C) Riding stables.
- (D) Structures or uses required for the operation of a public utility, road crossings and stormwater management improvements not otherwise permitted by this Ordinance; provided, however, that stormwater management ponds shall not be allowed in floodplains in watersheds of greater than 640 acres, except as provided in paragraph (E), below.
- (E) Those roads, as permitted under the provisions of the Zoning Ordinance and Land Subdivision and Development Ordinance, and ponds in the Potomac River floodplain. Due to the extensive watershed drained by the Potomac River in the States of Virginia, Maryland, and Pennsylvania, the Potomac River floodplain is unique in comparison to all other floodplains in Loudoun County. The Potomac River floodplain located in Loudoun County does not represent a significant portion of the entire Potomac floodplain, and accordingly, these less restrictive use regulations will apply to that area.
- (F) Incidental structures, greater than 840 square feet of floor area, associated with uses permitted by right or special exception in the Floodplain Overlay District.

4-1507 Standards For A Special Exception. In considering applications for a special exception, the Board of Supervisors must be satisfied that the following standards and those of Section 6-1300 have been met:

- (A) The proposed use will not increase the danger to life and property due to increased flood heights or velocities.
- (B) The proposed use will not increase the danger that materials may be swept downstream to the injury of others.
- (C) The proposed water supply and sanitation systems are designed to prevent disease, contamination, and unsanitary conditions.
- (D) The proposed use or structure must be located and designed to limit its susceptibility to flood damage, and available alternative locations, not subject to flooding, for the proposed use must be considered.
- (E) The proposed use is compatible with existing and planned development.
- (F) The proposed use is in harmony with the comprehensive plan.
- (G) The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters expected at the site should not cause significant damage.

4-1508

Alterations.

- (A) **Procedures for Alterations to the Floodplain.** Applications for alterations to the floodplain shall be subject to the following procedures:
 - (1) A Type I floodplain alteration application shall be submitted concurrently with Construction Plans and Profiles, preliminary/record plat, record plat, final site plan, or subdivision waiver applications. A Type II floodplain alteration application shall be submitted after preliminary subdivision or preliminary site plan approval. Approval of floodplain alteration applications will be required prior to approval of construction plans and profiles, record plats, or final site plans, whichever comes first.
 - (2) The applicant shall submit to the Zoning Administrator detailed studies in accordance with Section 5.400 of the Facilities Standards Manual.
 - (3) The Zoning Administrator shall refer the submitted studies to the appropriate agencies for review and recommendations based on Subsection 4-1508(B), below. The Zoning Administrator

shall notify the Virginia Water Control Board and the Federal Emergency Management Agency and any adjacent community which may be impacted prior to the approval of any alteration or relocation of a watercourse that is designated as a FEMA floodplain or floodway.

- (4) Following review of the application, the Zoning Administrator shall approve or disapprove the application and notify the applicant.

(B) **Engineering and Environmental Criteria for Proposed Alterations to the Floodplain.** All proposed alterations to the floodplain shall be reviewed by the Zoning Administrator, in consultation with appropriate agencies, to determine whether the following criteria have been met:

- (1) Alterations to the floodplain shall result in no off-site increase in the water surface elevation of the base flood, except as otherwise provided for in Section 4-1505(A)(12). Alterations in the floodway shall result in no rise in the water surface elevation of the base floodplain consisting of the water channel and overbank areas capable of conveying the deep and fast moving water discharge of the base flood as defined in the Federal Emergency Management Agency Flood Insurance study.
- (2) Alterations to the floodplain shall not create erosive water velocity on or off-site (where erosive water velocity is based on analysis of the surface material and permissible velocities for specific cross sections affected by the proposed alteration, using standard engineering tables as a general guide), and the mean velocity of stream flow at the downstream end of the site after alteration shall be no greater than the mean velocity of the stream flow under existing conditions.
- (3) Relocation or alteration of the natural stream channel shall not be permitted on streams that drain greater than 640 acres. Relocation or alteration proposals for streams that drain less than 640 acres shall include a stream rehabilitation program depicted on a floodplain alteration plan.
- (4) The maximum allowable slope of any filled area on the floodplain alteration plan shall be 2:1.

- (5) The floodplain alteration plan shall further include plans for erosion control of cut and fill slopes and restoration of excavated areas. The site plan should incorporate the use of natural materials (earth, stone, wood) on cut and fill slopes and provide for tree protection.
- (6) Alterations to the floodplain shall be in conformance with the provisions of Chapter 1220 of the Codified Ordinances of Loudoun County and the Erosion and Sediment Control Law, Va. Code Section 21-89.1 et seq.
- (7) The flood carrying capacity within the altered floodplain shall be maintained.

4-1509 Grading Plans and Construction Plans and Profiles Required.

- (A) Grading plans and/or construction plans and profiles are required for all uses in the floodplain overlay district, except for agricultural, forestry or fisheries uses not requiring the erection of structures. Alterations may be approved as part of either a subdivision or site plan application, or grading plan.
- (B) All structures built in the Floodplain Overlay District must conform to the requirements of the Uniform Statewide Building Code, including the floodproofing provisions of that code.

4-1510 Floodplain Information To Be Submitted With Land Development Actions. Floodplain information shall be included as part of rezoning, special exception, commission permit and site plan applications, and other land development applications, in accordance with Chapter 5 of the Facilities Standards Manual.

4-1511 Density Calculations. For purposes of calculating the permitted floor area and number of residential units in the underlying zoning district, the land area in any portion of the Floodplain Overlay District shall be treated as follows:

- (A) Any portion of the Floodplain Overlay District in a watershed of a stream draining less than 640 acres shall be included as part of the land area for such calculations.
- (B) Except to the extent permitted in approved County Flood Plain Studies, any portion of the regulatory floodplain within the Floodplain Overlay District in a watershed of 640 or more acres shall be excluded as part of the land area for such calculations.